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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,297	10/03/2000	HIROSHI KABURAGI	862.C2023	5739

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EXAMINER

PHAM, THIERRY L

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/678,297	Applicant(s) KABURAGI ET AL.	
	Examiner Thierry L. Pham	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-29 is/are pending in the application.
- 4a) Of the above claim(s) 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

- This action is responsive to the following communication: an Amendment filed on 9/2/05.
- Claims 19-29 are pending; claims 1-18 have been canceled.
- Previous Election/Restrictions mailed on 6/2/05 has been withdrawn in response to applicants' remarks/arguments filed on 9/2/05. A new Elections/Restrictions requirement is indicated below.

Election/Restrictions

- Species I: Claims 19-26, drawn to an image processing apparatus for binarizing the multilevel image using a dot connectivity parameter in accordance with the characteristic-information concerning dot reproducibility acquired from the external image output device as shown in fig. 2 (first embodiment).
- Species II: Claims 27-29, drawn to an image processing apparatus for binarizing the multilevel image using a dot connectivity parameter in accordance with a test pattern outputted by the external image output device as shown in fig. 23 (third embodiment).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

A provisional election was made (see page 8 of remarks filed on 9/2/05) with traverse to prosecute the invention of species I, claims 19-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27-29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima et al (US 6538762), and in view of Mizuoka et al (US 5166986).

Regarding claim 19, Terashima discloses an image processing apparatus (host computer 11 includes printer control unit 5, fig. 3) that transmits, via a network (a cable connecting printer 9 and host computer 11, fig. 3), binary image data to an external recording device (i.e. printer 9, fig. 3), which records an image based on the binary image data, said apparatus comprising:

- input means (input I/F 201 for receiving plurality of different types of image data, fig. 8) for inputting, pixel by pixel, a multilevel image containing gray-scale information;
- communication means (cable 15 for connecting host computer and printer, fig. 3) for communicating with the external image output device via the network;

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- characteristic-information acquisition means (control circuit 5 incorporated within host computer 11 for receiving printer's parameters that control printing mechanism of the printer, i.e. print head characteristics, inkjet printer dot parameters, col. 2, lines 58-60 and col. 6, lines 16-38, and also see col. 9, lines 30-65) for acquiring characteristic-information concerning dot reproducibility (i.e. number of dots in one raster horizontal line and number of vertical dots on one page, col. 6, lines 31-32) from the external recording device by said communication means;
- transmitting means (cable 15, fig. 3) for transmitting the image data binarized by said binarization means (color conversion/halftoning section of printer control circuit 5 for converting multilevel image into binary image, col. 7, lines 65-67) to the external image recording device;
- and said transmitting means (cable 15, fig. 3) transmits the image data binarized by said binarization means (color conversion/halftoning section of printer control circuit 5 for converting multilevel image into binary image, col. 7, lines 65-67) to the external image recording device (printer 9, fig. 3) from which the characteristics-information is acquired.

However, Terashima fails to teach and/or suggest a printer control unit 5 (notes: printer control unit 5 can be incorporated within a host computer and/or printer) that includes a binarization means for binarizing the multilevel image by using dot connectivity parameter which is variably controllable to control dot connectivity in a binary image; a determination means for determining the dot connectivity parameter used by the binarization means in accordance with the characteristics-information acquired by said characteristic-information acquisition means; and wherein said binarization means binarizes the multilevel image using the dot connectivity parameter determined by the determination means.

Mizuoka, in the same field of endeavor for image processing apparatus (fig. 1), teaches a binarization means (binarizations circuits 3-6, fig. 1) for binarizing the multilevel image (binarizing multilevel image data, col. 1, lines 55-57) by using dot connectivity parameter (using dot connectivity between pixels, col. 1, lines 55-60) which is variably controllable (different binary level can be controlled and/or conducted using dot connectivity, fig. 2 and fig. 4, col. 5, lines 10-22) to control dot connectivity in a binary image; a determination means (connectivity distribution means, fig. 1) for determining the dot connectivity parameter (dot connectivity parameter, figs. 2 & 4) used by the binarization means in accordance with the characteristics-information (filtering characteristics information, col. 5, lines 47-48) acquired by said

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characteristic-information acquisition means; and wherein said binarization means (binarization means for binarizing multilevel image data using dot connectivity distribution/parameters, fig. 1) binarizes the multilevel image using the dot connectivity parameter (dot connectivity parameters/distributions, fig. 2 & 4, col. 30-50) determined by the determination means.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made by modifying printer control unit 5 of Terashima to include binarization means for binarizing multilevel image data using dot connectivity parameters as taught by Mizuoka because of the following reasons: (●) providing an image processing apparatus including a binarization means for binarizing multilevel image signals even when a density of the object to be binarized is not uniform (col. 3, lines 12-14, Mizuoka); (●) providing an image processing apparatus including a binarization means for binarizing multilevel image signals even when there is a little difference in density between the object and the background of the multilevel image (Mizuoka, col. 3, lines 15-18).

Therefore, it would have been obvious to combine Terashima with Mizuoka to obtain the invention as specified in claim 19.

Regarding claim 20, Mizuoka further teaches the apparatus according to claim 19, further comprising correlation storing means (connectivity distribution memory 6, fig. 1) for storing a correlation (dot connectivity distribution, figs. 2 & 4) between the dot connectivity parameter and the characteristics-information of the external image recording device.

Regarding claim 21, Mizuoka further teaches the apparatus according to claim 19, further comprising dot connectivity parameter storing means (connectivity distribution memory 6, fig. 1) for storing the dot connectivity parameter determined by said determination means, wherein said binarization means (binarization circuits 3-6, fig. 1) binarizes the multilevel image data by using the dot connectivity parameter (binarizing the multilevel image using dot connectivity distribution as shown in figs. 2 and 4) stored in said dot connectivity parameter storing means.

Regarding claim 22, Mizuoka further teaches the apparatus according to claim 19, wherein said determination means calculates a dot connectivity parameter (calculating dot

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connectivity using the formula as shown in col. 4, lines 15-20) which is suitable for the external image recording device, which communicates via the network, based on the acquired characteristic-information.

Regarding claims 23-26: Claims 23-26 are the methods corresponding the apparatus and recite limitations that are similar and in the same scope of invention as to those in claims 19-22; therefore, claims 23-26 are rejected for the same rejection rationale/basis as described in claims 19-22 above.

Response to Arguments

Applicant's arguments filed 9/2/05 have been fully considered but they are not persuasive.

- Regarding claim 19, the applicants argued the cited prior art of record (US 6538762 to Terashima et al) fails to teach and/or suggest "characteristic-information acquisition means for acquiring characteristic-information concerning dot reproducibility from the external image recording device" and fails to point out any external image recording device from which such parameter are acquired.

In response, Terashima teaches "characteristic-information acquisition means for acquiring characteristic-information concerning dot reproducibility from the external image recording device" (control circuit 5 incorporated within host computer 11 for receiving printer's parameters that control printing mechanism of the printer, i.e. print head characteristics, inkjet printer dot parameters, col. 2, lines 58-60 and col. 6, lines 16-38, and also see col. 9, lines 30-65, i.e. number of dots in one raster horizontal line and number of vertical dots on one page, col. 6, lines 31-32). Clearly, the acquired parameters are from the printer device (printer 9, fig. 4).

Conclusion

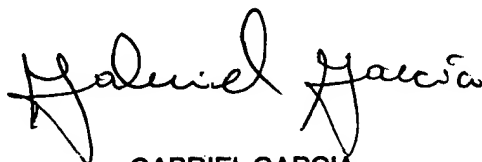
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 272-7439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham



GABRIEL GARCIA
PRIMARY EXAMINER